CK4S-120 series

12 input, DP, SDI, digital & analog seamless switcher

User Manual

Thank you for purchasing this product. For optimal performance and safety, read these instructions carefully. Please keep this manual for future reference.

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Important information

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Warning

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Do not place liquid containers (flower vase, cups, cosmetics, etc.) above the set (including on shelves above, etc.).

1. Power Supply

Only operate this product from the type of power supply included in the package. If you are not sure what the voltage is in your home or office please consult your local power provider. Disconnect the product before installation or maintenance.

2. Overloading

Do not overload a wall outlet, extension cord or adapter as this may result in fire or electric shocks.

3. Liquids

This product should not be exposed to any liquid. Also, no containers filled with liquid should be placed on the device.

4. Cleaning

Disconnect the product before cleaning. Please wipe the screen gently with a soft cloth. Do not use chemical solvents to clean this product as this will damage the exterior casing, tinted glass and the remote controller.

5. Mounting

Mount this product on a stable, even surface.

6. Cable

Do not intertwine, pull or compress the power cable, otherwise it can wear out and get damaged. When this system is being installed do not place any cable beneath the product, otherwise electric shocks or short circuits could occur.

Note

If any of the components listed in the checklist below are missing, please do not proceed with the installation. Contact the CREATEK reseller or vendor you purchased the CK4S120 from or contact an CREATEK sales representative directly. To contact an CREATEK sales representative, please send an email to sales@ckdz.com

Packing List

The items listed below should all be included in the CK4S120 package.

1 x CK4S120 Seamless Switcher
1 x Power cord
1 x RS-232 cord
1 x User manual
1 x Warranty card
1 x Certificate
1 x CD
1 x DVI cable (1.2m)
1 x VGA cable (1.5m)
4 x BNC connector

Chapter One - Instruction

This manual contains features instruction, structural characteristics and application, control software introduction and control port information for the CREATEK CK4S120 Seamless Switchers.

1.1 Brief Instruction

CK4S120 switcher support up to 12 signal inputs of different types (SDI, DP, DVI, AV, VGA, YPbPr) and resolutions, and scaling to DVI/VGA output. Switching smoothly and scaling expediently, for LED /LCD/DLP/PDP display, or, optionally, SD/HD/3G-SDI, DP device.

It is a professional video switcher for high-level, various video inputs presentation application, including entertainment stage show, multifunction conference room, multi-media presentation, etc…

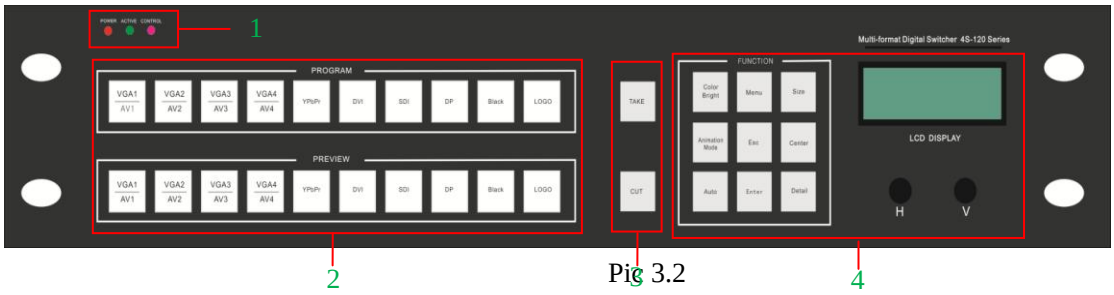
1.2 Features:

- Professional seamless switching between 12 inputs with preview output capability
- Combines 4Composite video, 4VGA, 1YPbPr(YCbCr),1DVI,1SDI,1DP, 1 LOGO and Black input sources
- SDI loop through for more SDI device
- Outputs: 2DVI-I,1VGA for program outputs and 1DVI-I,1VGA for preview outputs
- Allow customized still logo (theme image) by VGA or DVI input, logo can be displayed on the preview and program outputs.
- Brightness, contrast, adjustable for program display, auto adjustable for preview output.
- Selectable output resolutions: 1024x768/60Hz,1280x720Hz,1280x1024/60Hz, 1366x768/60Hz,1400x1050/60Hz, 1600x1200/60Hz, 1920X1080/60Hz.
- Advanced scale technology, to realize custom configuration of the position, size of output window
- 9 seamless switching effects including fade-in and fade-out switching, centre to surround, left to right, middle to aside, left top to right bottom, middle to top&bottom, right to left, bottom to top.
- 3 switching speeds options (fast, normal, slow)
- Impacted case, available for containing two LED sending cards inside(support Double Star and Linsn)
- Controlled by front panel, RS232, control software, console(optional) and ethernet control
- Rack-mountable 2U, full rack width metal enclosure with included brackets
- 100 VAC to 240 VAC, 50-60 Hz, internal power supply that provides worldwide power compatibility.
- Industrial level design, can work 24/d x 365/y
- None OS systems, boot faster and safety

Chapter Two –System Introduction

Pic 3.1

2.1 Front Panel Controls and Indicators



Pic 3.2

1. The indicator LCD display area
2. The main window, preview window, video source selection switching area
3. Switching area
4. Function button and display area

2.1.1 Indicators area

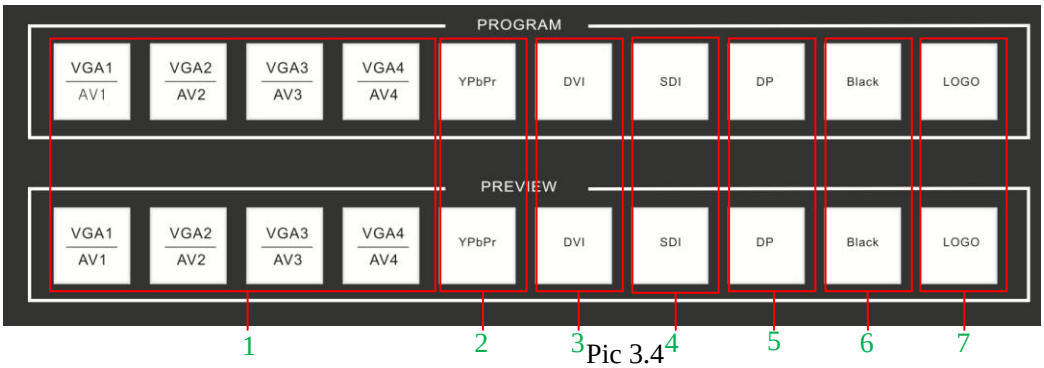
Pic 3.3

Power: the light lighting while the device work normally

Active: the light flashing while the device work normally

Control: the lights flash when the device controlled by front panel and control software.

2.1.2 Source selection button

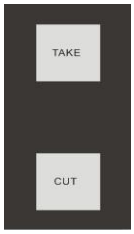


Pic 3.4

1. Program out/Preview out signal sources: VGA1-VGA4(AV1-AV4)

   Note: blue light indicate its VGA selection when press button, and orange light indicate AV function. (please see 3.2.5 about signal setting)
2. YPbPr Program out/ Preview out
3. DVI Program out/ Preview out
4. SDI Program out/ Preview out
5. DP Program out/ Preview out
6. BLACK Program out/ Preview out
7. LOGO Program out/ Preview out

2.1.3 Switch button

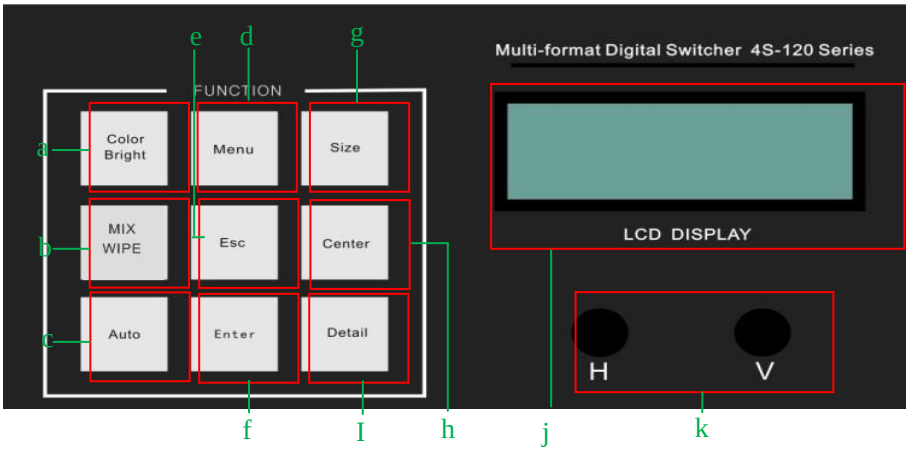


Take: press TAKE button to switch the *preview* source to *program* source (main output) with

9 switching effects

Cut: press CUT button to switch the *preview* source to *program* source without switching effects

2.1.4 Function menu and LCD display area



a. Color Bright: adjust the value of contrast and brightness via the right side of H/V knob.

b. Mix/Wipe:

9 seamless switching effects including

- fade-in and fade-out switching, (Mix)
- centre to surround, (RADIATE）
- left to right, （T to B）
- top to bottom, (B to T)
- middle to aside, （to L and R）
- left top to down bottom, （LT to RB）
- middle to top&bottom, （to T and B）
- right to left, （R to L）
- bottom to top, （B to T）

c. Auto: automatically adjust the preview output

d. Menu: press the button to enter menu, choose the menu via H knob.

1) choose language: Chinese and English
2) choose logo: after entering the menu, two signals(VGA1,DVI) can be chosen as the logo via H knob.

Note**: the logo signal's input resolutions should be greater than or equal to the machine's output resolution, each resolution corresponds to a logo, if you change the output resolution, logo should be re-programmed, or the screen will be flicking due to the resolution.**

3) Save logo: After selecting the logo signal, press enter key to go into the menu of choose logo, press enter key again to save the logo via H knob. During the process of saving logo, the window will display as following,(o% stands for the current progress)

Saving logo data, don't power off 0%
Current output 1920x1080
Current input 1920x1080

After that, the window will display as following,

Finished, power off then power on 100%
Current output 1920x1080
Current input 1920x1080

Then restart, if the input resolution is less than the machine's output resolution, the window will display as following,

Input Resolution is too small! 0%
Current output 1920x1080
Current input 1280x768

You need to power off and restart, reset the resolution and resave the logo.

Note: **During the saving progress, do not do the other operations, and mustn't power off.**

4) Source type 1to4: set the input ports 1 to4 to select VGA or AV. Eg: If you need to select VGA signal in port 3, you can do as following,
When entering into the source type menu, select the input port1-4, select the input port 3 via V knob, then press enter key, select the source type VGA via V knob, press enter key again.
5) Switch speed: 3 switching speeds options (fast, normal and slow), select the menu, press enter key, select the speed via V knob.
6) Color adjustment (ADC): Select the menu then press enter key to adjust color.

Note: **only analog signals can be adjusted, digital signals can't be adjusted.**

7) Program lock: Lock the program video source selection buttons. Select the menu then press enter key, via V knob to select Program lock, it can't switch after locked to avoid misuse.
8) Resolution adjustment: selectable output resolutions including 1024x768/60Hz,1280x720Hz,1280x1024/60Hz, 1366x768/60Hz,1400x1050/60Hz, 1600x1200/60Hz, 1920X1080/60Hz. Select the menu, press enter key, via V knob to select the resolution, press enter key again, the device will shut down and auto restart, then the output resolution has been set.
9) Reset: select the menu, press enter key to reset. After resetting, the device is in default state: input source is DVI, window content and size are in state of full screen, the brightness and contrast are also in default state.

e. Esc
f. Enter
g. Window size: output main window size adjustment, adjust the horizontal direction via H knob, adjust the vertical direction via V knob)
h. Center: output main window's X-Start, Y-Start points content and size adjustment, adjust the horizontal direction via H knob, adjust the vertical direction via V knob
When Center and Detail light up at the same time (green light), means the window content

adjustment

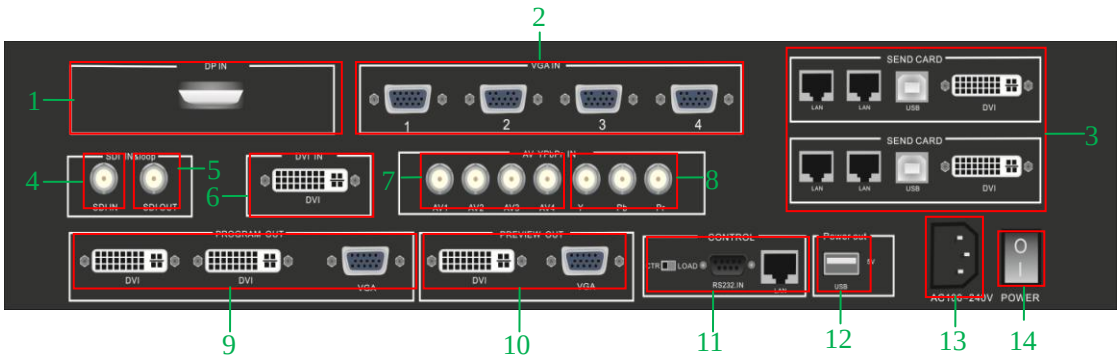
When Center and size light up at the same time (red light), means the window size adjustment.

I. Detail: output main window content adjustment, adjust the horizontal direction via H knob, adjust the vertical direction via V knob.

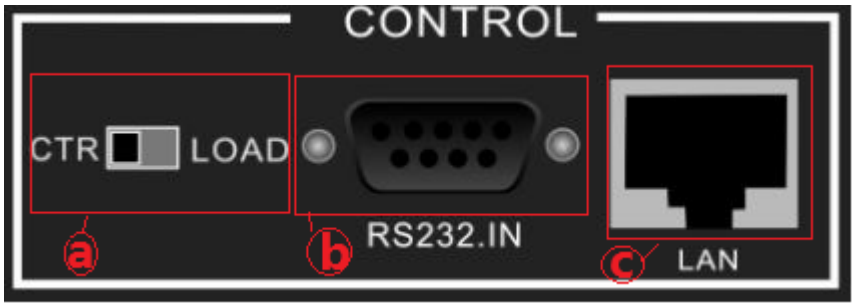
J. Display: led display

k. H/V knob

2.2 Rear panel ports diagram



1. DP signal input
2. VGA signal input (altogether four inputs)
3. Sending card slot
4. SDI signal input
5. SDI signal loop through output
6. DVI signal input
7. AV signal input(altogether four inputs)
8. YPbPr signal input
9. Program output (2 digital DVI,1 analog VGA): DVI output can be connected the sending cards; analog vga output can be connected the computer for monitoring
10. Preview output(1 digital DVI, 1 analog VGA): can be connected to the computer for monitoring
11. Control port, as Pic 3.8



Pic 3.8

ⓐ: switch to CTR for control equipment, switch to LOAD for upgrade program

ⓑ: RS232 control port
ⓒ: Ethernet control port

12. 5V power out
13. Power outlet(100-240v)
14. Power switch

Chapter Three –Control Software Introduction

NOTE: *CK4S120 control software can be operated in Windows 2000, Windows XP or Windows 7*

Software Installation

Put CD into your computer, find the files named dotNetFX35setup.exe, install them and the software "ApplicationCK4S120.exe" can run successfully.

3.1 System running up

3.1.1 Run the application CK4S120.exe

Double click

, the UI will display as following (pic 4.1),

Pic 4.1

3.1.2 Communication setting

Below the UI is Communication Setting Area, Please select the COM port of your computer which is connected to the controller via RS232 cable, and select the Baud, then click the connecting button. If the current COM port was occupied, the window will pop up as following:

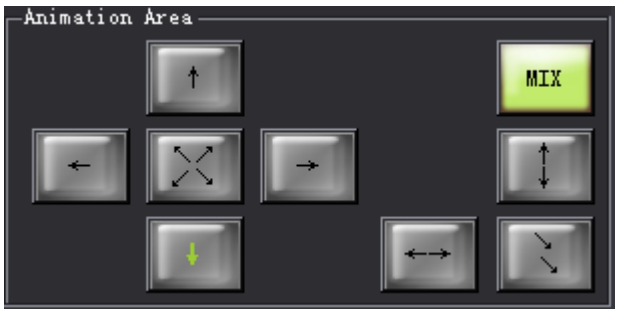
Pic 4.2

3.2 Main Window Control

UI operation including the switcher's switching effects selection, switching speed selection, mode selection and switch operations.

3.2.1 Animation Area

Altogether 9 seamless switching effects as following:



Pic 4.3

: From bottom to up

: From top to bottom

: Right to left

: Left to right

: Centre to surround

: Middle to aside

: Middle to top&bottom

: left-top to down-bottom

: Fade-in and fade-out switching

3.2.2 Speed Switching Area

3 switching speeds options (fast, normal, slow)

Pic 4.4

3.2.3 Signal Switching Area

Pic 4.5

All the signals in the block of PROGRAM are the main window signals, and the signals in the block of PREVIEW are the preview window signals.

Note**: LOGO button's function is to call the saved logo.**

3.2.4 Switch Area

After selecting the switching effects, speed and signals, you can switch the preview signals to the program output via click the switch button.

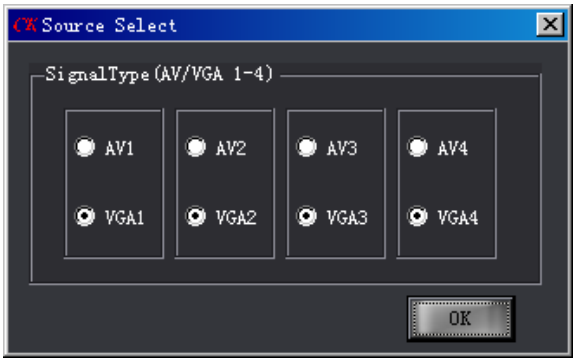
Pic 4.6

3.2.5 Signal Setting

AV and VGA setting, you need to select 1-4 AV and 1-4 VGA signals.

Pic 4.7

Click the button, the Source Select window will pop up as following.



Pic 4.8

After setting the source type, please press ok to save and exit the setting.

Note**: if user don't press OK, it will not save the setting.**

3.2.6 Console and Software Sync.

As following picture (pic 4.9), click Sync, if the software and the machine is connected, the software will update the UI to make the console and software sync.

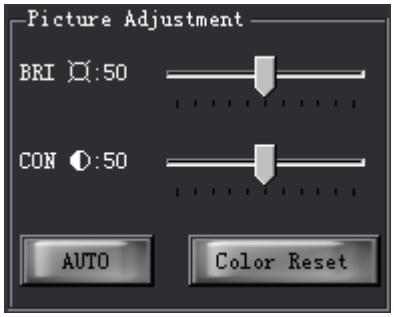
Pic 4.9

When connecting is abnormal, window will pop up as following.

Pic 4.10

3.2.7 Picture Adjustment

As below, you can set the BRI /CON of the program output signals.
AUTO: auto-adjust the preview signals.
Color Reset：reset the color of the program output signals.

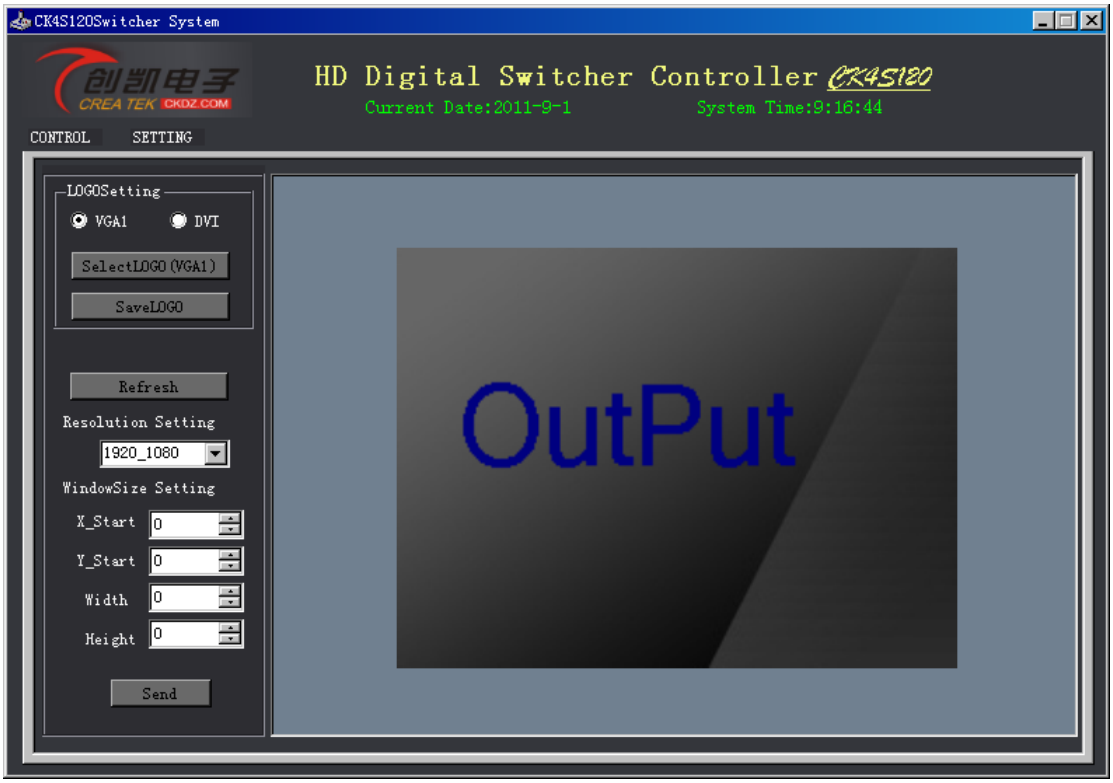


Pic 4.11

3.3 UI Setting

You should enter the passwords (szckdz) to operate the setting interface as below,

Click SETTING, the new window will pop up as below, UI Setting including:
LOGO setting, window size setting, resolution setting and signals fine-tuning.



Pic 4.12

3.3.1 LOGO Setting

Logo selection: Firstly select the DVI or VGA in the LOGO SETTING block. Secondly, press SELECT LOGO, system will adjust the preview and program signal, and set this video source full-screen display, to be prepare for logo saving.

Logo saving: click the logo saving button, system will freeze and save the prepared video source, and the windows will pop up as below (o% stands for the current progress)

Saving logo data, don't power off 0%
Current output 1920x1080
Current input 1920x1080

Note: **During the saving progress, do not do the other operations, and mustn't power off.**

After that, the screen will display:

Finished , power off then power on 100%
Current output 1920x1080
Current input 1920x1080

Then restart, if the input resolution is less than the machine's output resolution, the window will display as following,

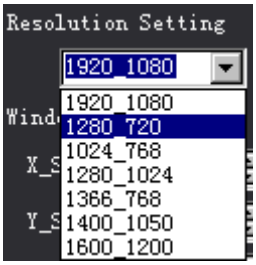
Input Resolution is too small! 0%
Current output 1920x1080
Current input 1280x768

You need to power off and restart, reset the resolution and resave the logo.

3.3.2 Refresh

After click refresh button, all the signals restored to the default values: the main output window is full screen display and preview and program output signal is DVI

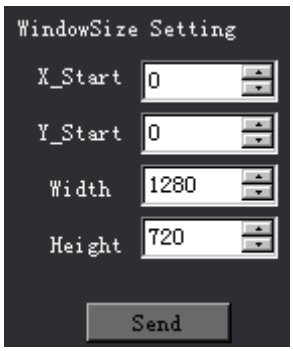
3.3.3 Resolution Setting



Note: after setting one resolution, you need wait for 3 seconds until the machine set the related operations.

3.3.4 Window Size Setting

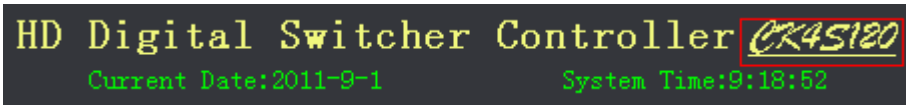
As below shows, window size can be set via just click the button, you can also set the window size via enter the numbers of X_Start, Y_Start,Width and Height, and then click Send.

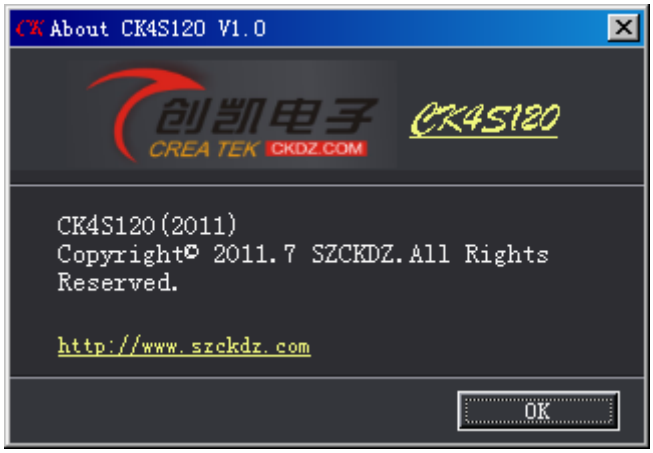


Pic 4.15

3.4 Version Information

Version information is showed below,





Chapter Four –Communication Port

RS232 control and scene restore agreement

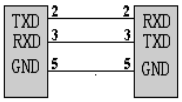
RS232 control

CK4S-120 has standard DB9 RS-232(9 pin male connector) serial port for remote control. PIN out：

Pin#	name	description
1	NC	--
2	TXD	Connect to device RXD
3	RXD	Connect to device TXD
4	NC	--
5	GND	Connect to device GND
6	NC	--
7	NC	--
8	NC	--

9	NC	--

Note: Please use RS232 cross cable (RXD to TXD) to connect controller and device. As below



CK4S120 Computer

RS232 connect diagram

Chapter Five –Troubleshooting

This section provides some simple troubleshooting suggestions.

1. CK4S120 can't boot up(power light is off)
   Check to that whether the power cord is damaged
   Check to that whether the power has access to the electricity
   Make sure the power is turned on
   Check to that whether the power switch is damaged
   Check to that whether the insurance is blown
2. Software doesn't run on PC/Windows.
   Please try to install plug-in."dotnetfx35.exe", users can download the plug-in from Microsoft's official website.
3. Control software can not control.
   1) Check to that the RS-232 cable is securely connected to computer.
   2) Make sure the COM port is selected correctly, double check the" manager-device manager-ports" to view the COM port number on PC/Windows.
   3) Make sure the RS-232's baud rate is 115200 in the control software.
4. No signal display on the screen
   1) Make sure not to switch to the no signal source
   2) Make sure not to switch to the Black signal
   3) Make sure the monitor can display normally
   4) Make sure the input and output connection cables are connected correctly.
5. VGA signal display has a black border, or screen jitter.
   1) Check to that the GND(ground) of signal cable is securely connected.
   2) Check to that VGA's resolution is under 1920*1080/60HZ
   3) Check to that the LED pixel matrix size is corresponding to controller's output.

Chapter Six –Technical Specification

Input signal	
Display Port x 1	Mini display port, compatible with HDMI/DVI
VGA x 4	VGA (15 pin HD), VGA, 800×600@60Hz, 1024×768@60Hz, 1280×720@60Hz, 1280×1024@60Hz, 1366X768@60Hz, 1400X1050@60HZ, 1600X1200@60Hz, 1920×1080@60Hz
AVx 4	BNC, female, CVBS x 4, support PAL/NTSC, impedance: 1V （p_p）/75Ω
DVI x 1	DVI-I connector (DB 24+5), DVI-I signal format, Digital HD, HDMI 1.3,
SDI x 1	BNC, SDI/SD-SDI, HD-SDI, 3G-SDI, 720×480i@59.94Hz/60Hz, 720×576i@50Hz, 1280×720p@50Hz/59.94Hz/60Hz, 1920×1080i@50Hz/59.94Hz/60Hz
Y-Pb-Pr x 1	BNC, female, Analog HD x1, 720×480i@59.94Hz/60Hz, 720×480p@59.94Hz/60Hz, 720×576i@50Hz, 720×576p@50Hz, 1920×1080p@50Hz/59.94Hz/60Hz , 1920×1080i@50Hz/59.94Hz/60Hz YPbPr Impedance extent: Y= -0.3V ~ +0.7V （p_p）/ 75Ω Pb= -0.35V ~ +0.35V （p_p）/ 75Ω Pr= -0.35V ~ +0.35V （p_p）/ 75Ω
Logo(theme image)	Captured from VGA and DVI input, as still logo image, stored into processor
USB x1	USB connector on front panel, offer 5V power supply
Output signal and resolutions	
VGA x 1-preview	VGA x 1 (15 pin D-Sub), for monitoring, R、G、B = 0.7 V （p_p）/ 75Ω
DVI x 1-preview	DVI-I (DB 24+5)
VGA x 1-program	VGA x 1 (15 pin D-Sub), for monitoring, R、G、B = 0.7 V （p_p）/ 75Ω
DVI x 2-program	DVI-I (DB 24+5)
USB x1	USB connector on front panel, offer 5V power supply
Functions	
Processing bits:	10 bits
processing tech:	De-interlacing and Noise Reduction
Transition:	9 switching effects
Transition Speed:	fast, normal, slow
Processing Channel:	Dual, 2DVI, 1VGA for program, 1DVI, 1VGA for preview
Scaler:	1024*768/60HZ, 1280X720/60Hz, 1280X1024/60Hz,1366X768/60Hz, 1400X1050/60Hz, 1600x1200/60Hz, 1920X1080/60Hz
Maximum resolution:	1080P
Downscaler:	available
Output Refresh rate:	60Hz
Black:	Support inner black background display
Control	
Front panel	Full-function operation with LCD indicator, to show status, select input source, switching effect, speed, output resolution, window size, position, store theme image

RS232x 1	RS-232, 9-pin female D connector, support the third party controller system		
Console (optional)	**Full-function console available for optional providing**		
TCP/IP (optional)	RJ45 port for long distance control, over Internet/LAN/WAN network		
Control software	WYSIWYG(what you see is what you get) operation, and UI sync with front buttons		
General			
Operating Temperature	0°C - 60 °C	Operating Humidity	5% - 95%
Power Supply	100 - 240Vac, 50Hz	Power Consumption	37W
Cabinet	2U model	Cabinet Dimension	290(L) x 430(w) x 110(H) (mm)
Weight	~8kg		